

CLAIMS

What is claimed is:

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1 A data collection system comprising:

2 a GSM network;

3 a user application server coupled to said GSM network;

4 a data terminal apparatus including a communications

5 bridge, a first interface, and a wireless radio,

6 said wireless radio configured to connect to said

7 GSM network; and

8 a user equipment coupled to said data terminal

9 apparatus through said first interface, said user

10 equipment configured to collect and send data

11 through said first interface as if placing a

12 circuit switched call link; wherein

13 said communications bridge is configured to simulate

14 said circuit switched call link to said user

15 equipment and to communicate said data over said

16 GSM network through said wireless radio using a

17 non-circuit switched call link, and GSM network

18 is configured to route said data to said user

19 application server for processing.

1 2. The data collection system of claim 1, wherein said  
2 non-circuit switched call link is made via one or more  
3 short message service messages.

1 3. The data collection system of claim 1, wherein said  
2 non-circuit switched call link is made via one or more  
3 general packet radio service messages.

□ 1 4. The data collection system of claim 1, wherein said  
□ 2 communications bridge comprises application layer object  
□ 3 code built over a GSM protocol stack associated with said  
□ 4 wireless radio, said application layer object code  
□ 5 configured to handle incoming AT commands from said user  
□ 6 equipment and handle said simulation of said circuit  
□ 7 switched call link to said user equipment.

1 5. The data collection system of claim 1, said  
2 communications bridge further comprising a preprocessor  
3 unit, said preprocessor unit comprising:  
4       a microcontroller;  
5       a non-volatile memory coupled to said microcontroller;  
6       a volatile memory coupled to said microcontroller;  
7       an input output controller coupled to said  
8            microcontroller, said input output controller  
9            including said first interface and a second  
10          interface, said wireless radio coupled to said  
11          microcontroller through said second interface.

1 6. The data collection system of claim 1, wherein said  
2 communications bridge is configured to packetize data  
3 received from said first interface into short message  
4 service format.

1 7. The data collection system of claim 1, wherein said  
2 communications bridge is configured to packetize data  
3 received from said first interface into general packet  
4 radio service format.

1 8. A method for collecting data over a GSM network  
2 comprising:

3 receiving data at a data terminal apparatus from a  
4 user equipment;  
5 simulating a circuit switched call link response to  
6 said user equipment;  
7 packetizing said received data into packets for  
8 transmission over a non-circuit switch call link  
9 to said GSM network;  
10 transmitting said packetized data over said GSM  
11 network; and  
12 routing said packetized data through said GSM network  
13 to a user application server.

1 9. The method of claim 8, wherein said packets are short  
2 message service packets.

1 10. The method of claim 8, wherein said packets are  
2 general packet radio service packets.

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1 11. A method for receiving information over a GSM network  
2 comprising:  
3 transmitting a packet of information over said GSM  
4 network, said packet originated by a user  
5 equipment;  
6 receiving said packet of information at a data  
7 terminal apparatus;  
8 establishing a simulated circuit switched call link  
9 between said data terminal apparatus and a user  
10 equipment;  
11 transforming said packet of information into serial  
12 data information; and  
13 sending said serial data information from said data  
14 terminal apparatus to said user equipment over  
15 said simulated circuit switched call link.

1 12. The method of claim 11, wherein said packet of  
2 information is in short message service format.

1 13. The method of claim 11, wherein said packet of  
2 information is in general packet radio service format.

1 14. A computer-readable medium having stored therein  
2 sequences of instructions for collecting data over a GSM  
3 network, said one or more sequences of instructions causing  
4 one or more processing to perform the acts of:  
5 receiving data at a data terminal apparatus from a  
6 user equipment;  
7 simulating a circuit switched call link response to  
8 said user equipment;  
9 packetizing said received data into packets for  
10 transmission over a non-circuit switch call link  
11 to said GSM network;  
12 transmitting said packetized data over said GSM  
13 network; and  
14 routing said packetized data through said GSM network  
15 to a user application server.

1 15. The computer readable medium of claim 14, wherein said  
2 packets are short message service packets.

1 16. The computer readable medium of claim 14, wherein said  
2 packets are general packet radio service packets.

1 17. A computer readable medium having stored therein  
2 sequences of instructions for receiving information over a  
3 GSM network, said one or more sequences of instructions  
4 causing one or more processors to perform the steps of:  
5 transmitting a packet of information over said GSM  
6 network, said packet originated by a user  
7 equipment;  
8 receiving said packet of information at a data  
9 terminal apparatus;  
10 establishing a simulated circuit switched call link  
11 between said data terminal apparatus and a user  
12 equipment;  
13 transforming said packet of information into serial  
14 data information; and  
15 sending said serial data information from said data  
16 terminal apparatus to said user equipment over  
17 said simulated circuit switched call link.

1 18. The computer readable medium of claim 17, wherein said  
2 packet of information is in short message service format.

1 19. The computer readable medium of claim 17, wherein said  
2 packet of information is in general packet radio service  
3 format.

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